Journal reading

Presenter: PGY2 楊璿霏
Supervisor: VS 鄭評嘉

LARYNGOLOGY

Scientometric analysis of trends in research in laryngopharyngeal reflux

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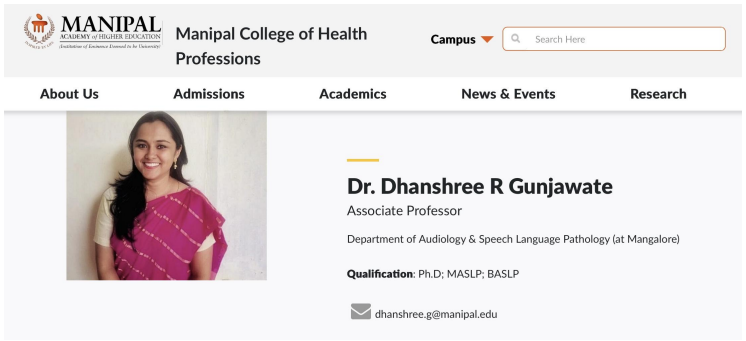

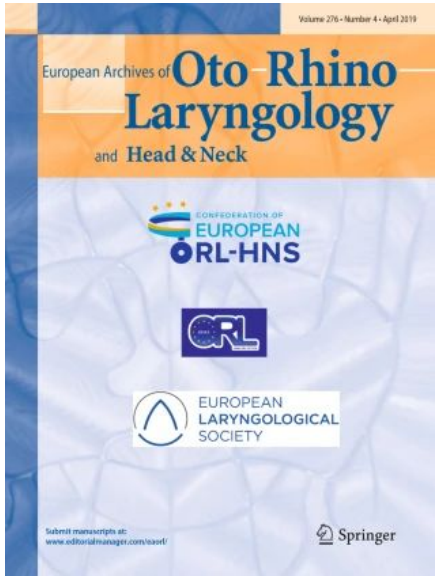

Impact Factor: 2.2

01

INTRODUCTION

Clinical Differentiation

	GERD	**LPR**
Definition	reflux of gastric contents into distal esophagus	reflux of gastric contents reaching larynx and pharynx
Mechanism	LES dysfunction	UES dysfunction + impair reflux clearance
Reflux pattern	mostly supine, nocturnal	predominantly upright, daytime
Symptoms	heartburn, regurgitation	throat clearing, globus sensation, hoarseness
EGD findings	esophagitis common	usually normal
Laryngoscopy findings	not routinely required	posterior laryngitis, arytenoid edema, erythema
Diagnostic tools	EGD, 24-hour pH monitoring	No gold standard
Adjunctive tools	pH monitoring, impedance	RSI, RFS, pH impedance
Response to PPI	generally good	variable, depend on type

02

METHOD

Study Design and Setting

Database	Scopus
Total hits	7,327
Final analyzed	5,637 (5615 journal article; 22 conference proceedings)
Metrics	• Publication growth • Top contributors • Keyword co-occurrence
Objective	Using scientometric tools (VOSviewer) to map the evolution of LPR research from 1970 to 2024.

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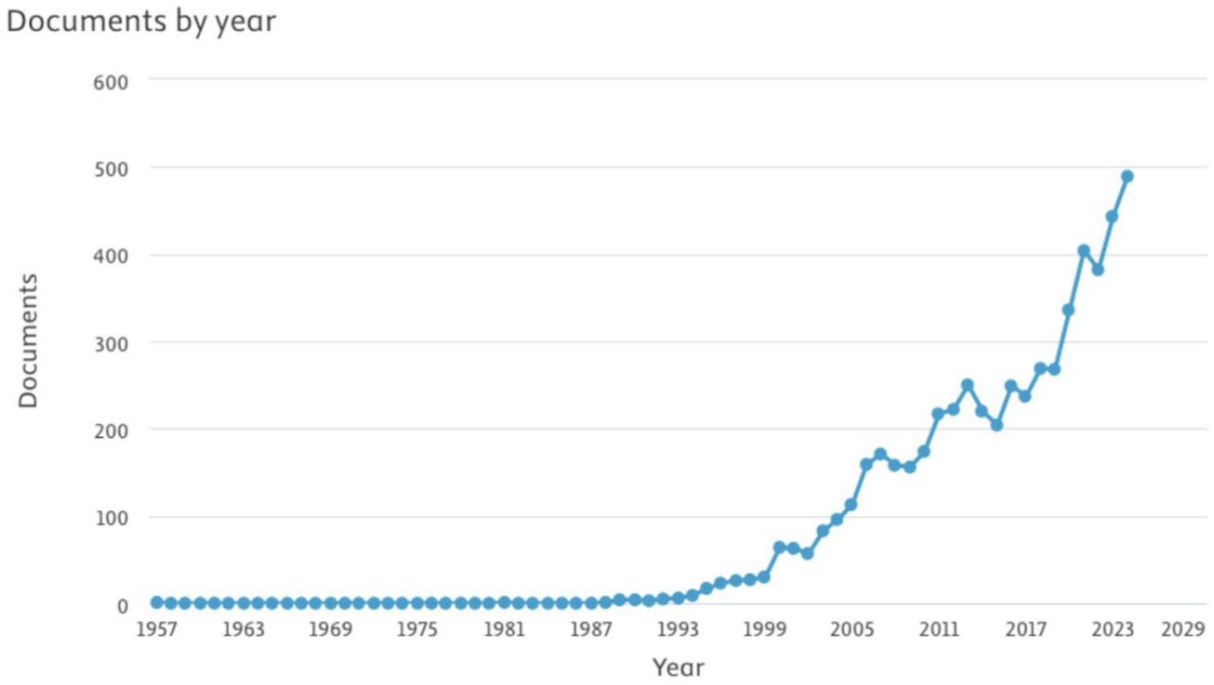
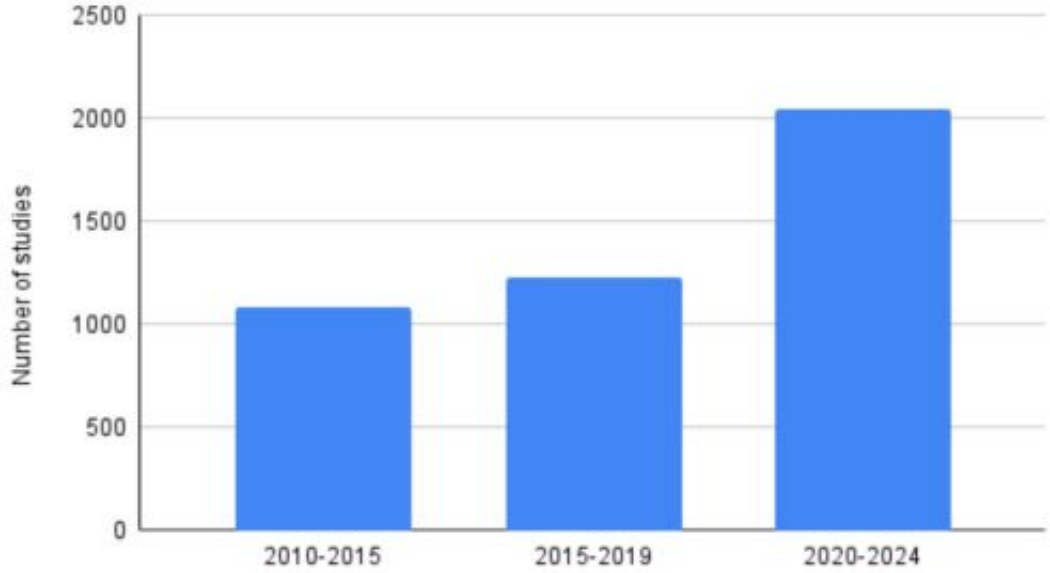
RESULT

The Surge in Global Interest

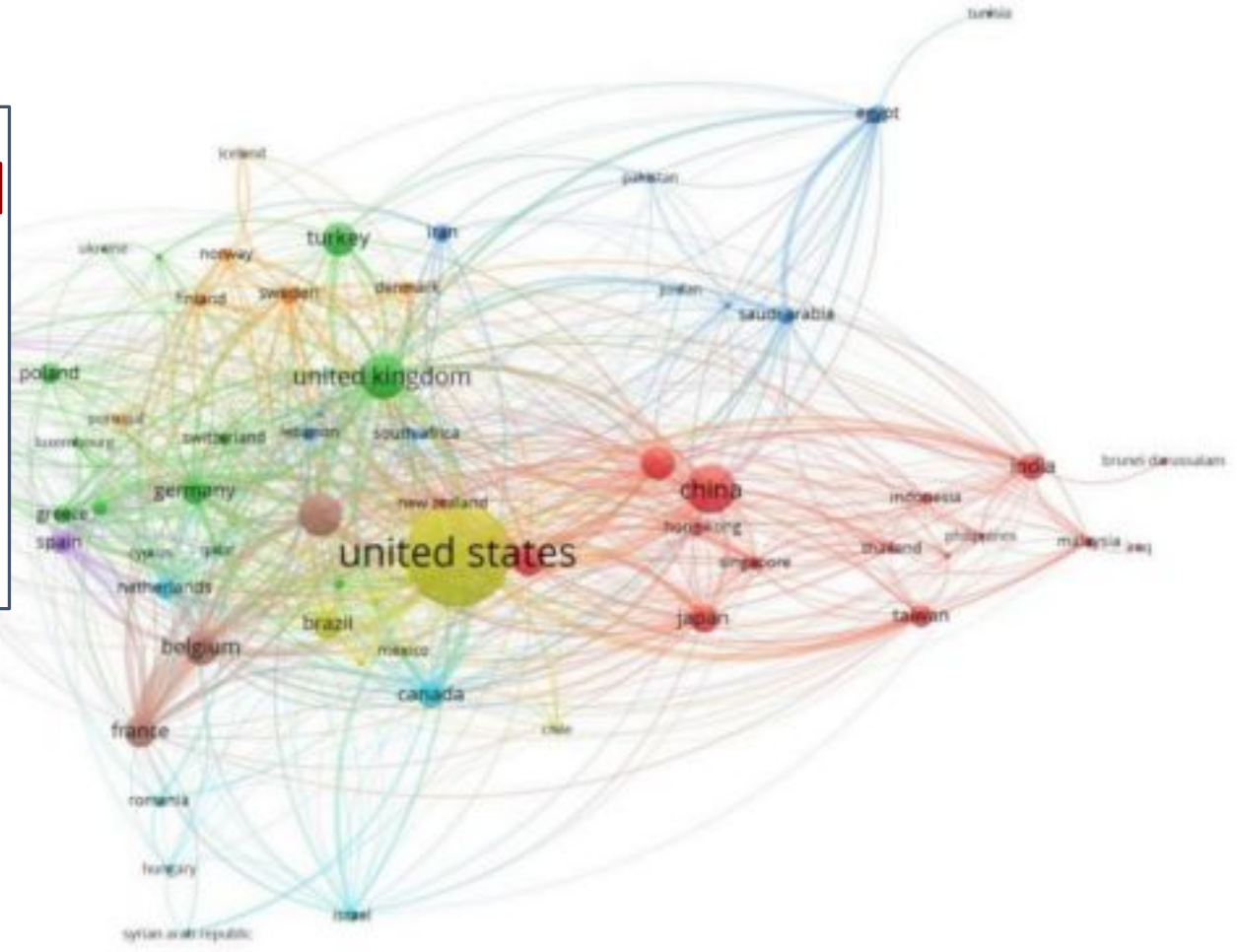
- Exponential growth since 21st century





Countries contributing most publications

Country	*n* (%) of records
USA	2230 (39.56%)
China	494 (8.76%)
United Kingdom	421 (7.47%)
Italy	387 (6.87%)
Belgium	252 (4.47%)
South Korea	234 (4.15%)
Turkey	225 (3.99%)
Australia	215 (3.81%)
France	207 (3.67%)
Brazil	187 (3.32%)



Institutions contributing most publications

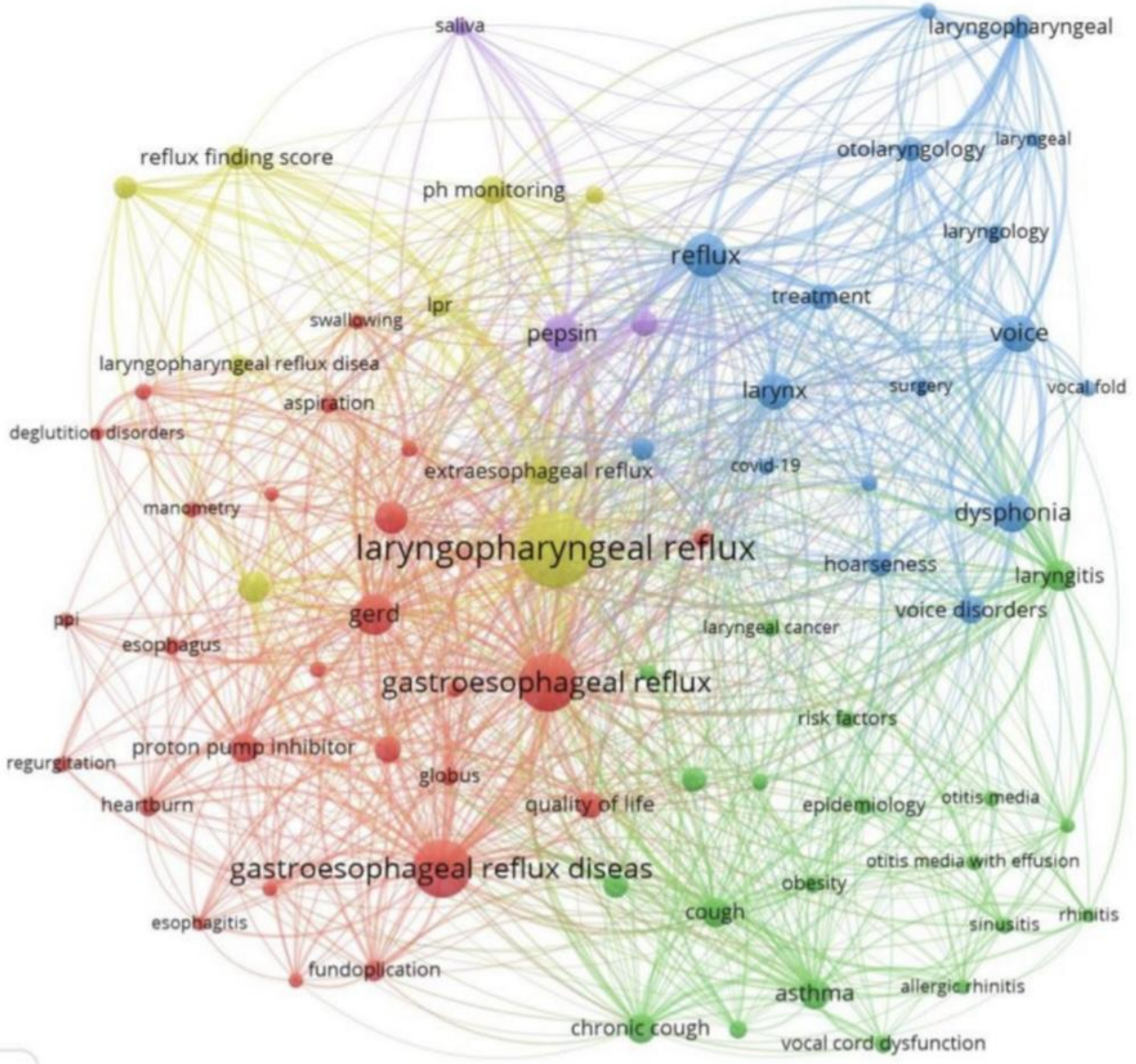
University /Institution	*n* (%) of records
Medical College of Wisconsin (Milwaukee, Wisconsin, USA)	147 (2.61%)
Université de Mons (Mons, Belgium)	130 (2.31%)
Harvard Medical School (Boston, Massachusetts, USA)	108 (1.92%)
Vanderbilt University Medical Center (Nashville, Tennessee, USA)	106 (1.88%)
Hopital Foch (Suresnes, France)	100 (1.77%)
Centre Hospitalier Universitaire Saint Pierre (Brussels, Belgium)	99 (1.76%)
Université Paris-Saclay (Paris, France)	93 (1.65%)
Northwestern University Feinberg School of Medicine (Chicago, Illinois, USA)	85 (1.51%)
University of Wisconsin School of Medicine and Public Health (Madison, Wisconsin, USA)	79 (1.40%)
Drexel University College of Medicine (Philadelphia, Pennsylvania, USA)	72 (1.28%)

Primary Publication Platforms

Name of Journal	Publisher	*n* (%) of records
Journal of Voice	Elsevier	362 (6.42%)
Laryngoscope	Wiley	297 (5.27%)
Otolaryngology-Head and Neck Surgery	Wiley	185 (3.28%)
European Archives of Oto Rhino Laryngology	Springer	169 (3.00%)
Annals Of Otology, Rhinology and Laryngology	SAGE	133 (2.36%)
International Journal of Pediatric Otorhinolaryngology	Elsevier	85 (1.51%)
Ear Nose and Throat Journal	SAGE	82 (1.45%)
Journal of Laryngology and Otology	Cambridge University Press	81 (1.44%)
Current Opinion in Otolaryngology and Head and Neck Surgery	Lippincott Williams & Wilkins	74 (1.31%)
American Journal of Gastroenterology	Lippincott Williams & Wilkins	69 (1.22%)

Top 10 contributing authors

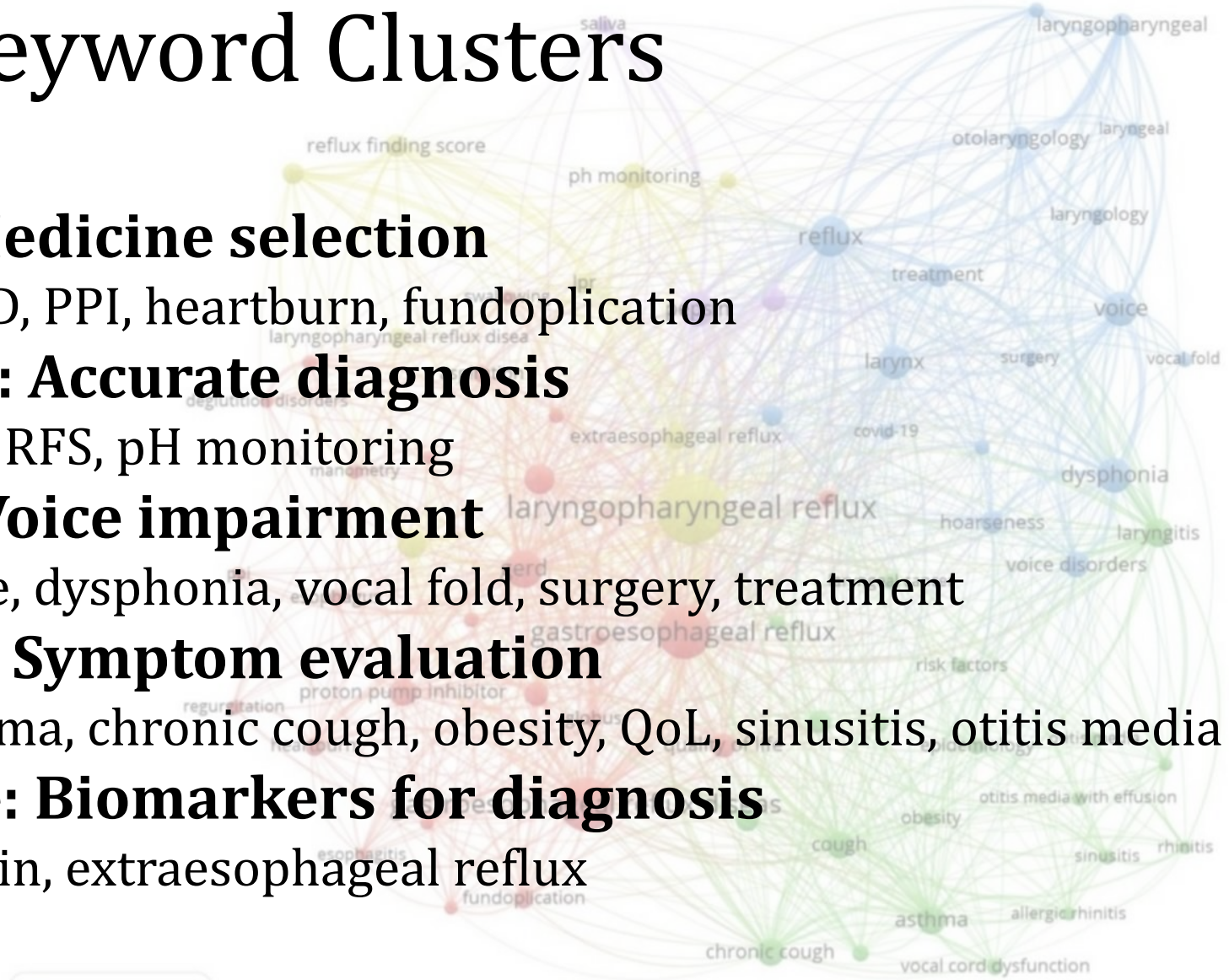
Name of author	Country	*n*(%) of records
Lechien, J.R.	Belgium	142 (2.52%)
Vaezi, M.F.	USA	102 (1.81%)
Sataloff, R.T.	USA	77 (1.37%)
Saussez, S.	Belgium	73 (1.30%)
Johnston, N.	USA	62 (1.10%)
Fass, R.	USA	45 (0.80%)
Carroll, T.L.	USA	41 (0.73%)
Hans, S.	France	41 (0.73%)
Belafsky, P.C.	USA	39 (0.69%)
Koufman, J.A.	USA	39 (0.69%)


saliva
laryngopharyngeal
reflux finding score
otolaryngology
laryngeal
ph monitoring
laryngology
reflux
treatment
lpr
swallowing
pepsin
voice
laryngopharyngeal reflux disea
larynx
surgery
vocal fold
aspiration
deglutition disorders
extraesophageal reflux
covid-19
manometry
dysphonia
laryngopharyngeal reflux
hoarseness
laryngitis
ppi
gerd
voice disorders
laryngeal cancer
esophagus
gastroesophageal reflux
risk factors
proton pump inhibitor
regurgitation
globus
heartburn
quality of life
epidemiology
otitis media
otitis media with effusion
gastroesophageal reflux diseas
obesity
cough
rhinitis
sinusitis
esophagitis
fundoplication
asthma
allergic rhinitis
chronic cough
vocal cord dysfunction

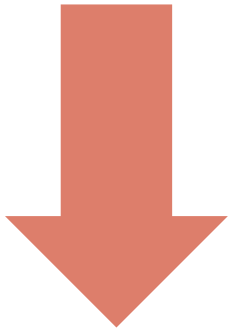
VOSviewer

Five Keyword Clusters

- **Red: Medicine selection**
  - GERD, PPI, heartburn, fundoplication
- **Yellow: Accurate diagnosis**
  - LPR, RFS, pH monitoring
- **Blue: Voice impairment**
  - Voice, dysphonia, vocal fold, surgery, treatment
- **Green: Symptom evaluation**
  - Asthma, chronic cough, obesity, QoL, sinusitis, otitis media
- **Purple: Biomarkers for diagnosis**
  - Pepsin, extraesophageal reflux



The Diagnostic Shift



Empiric PPI Trials

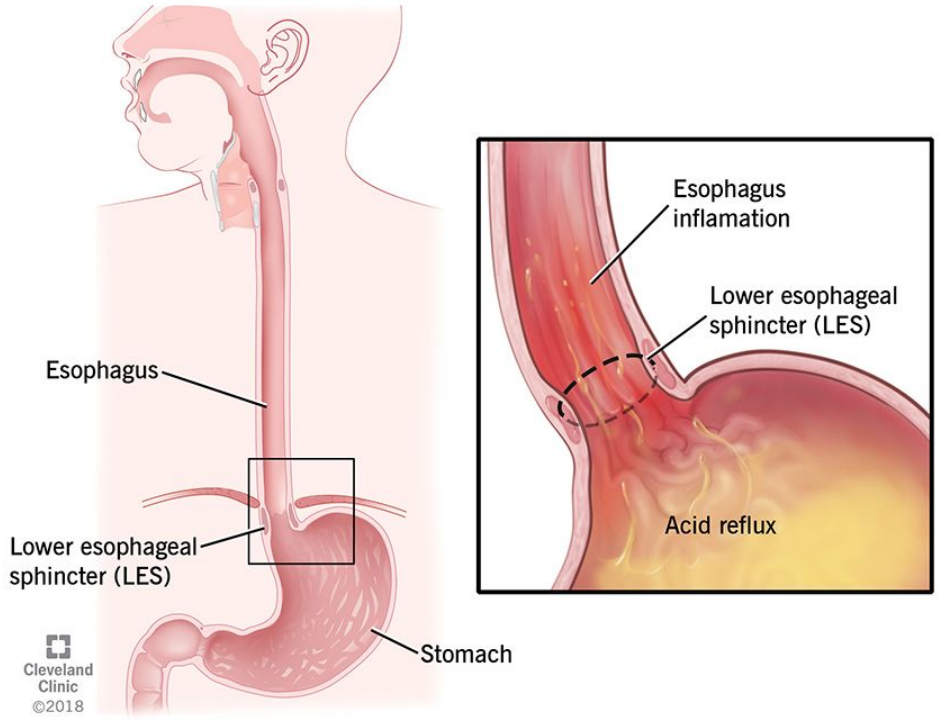
- Diagnosis
  - Multichannel Intraluminal Impedance-pH
  - Pepsin Testing
- Management
  - Lifestyle changing
  - Medication
  - Sugery

04

DISCUSSION

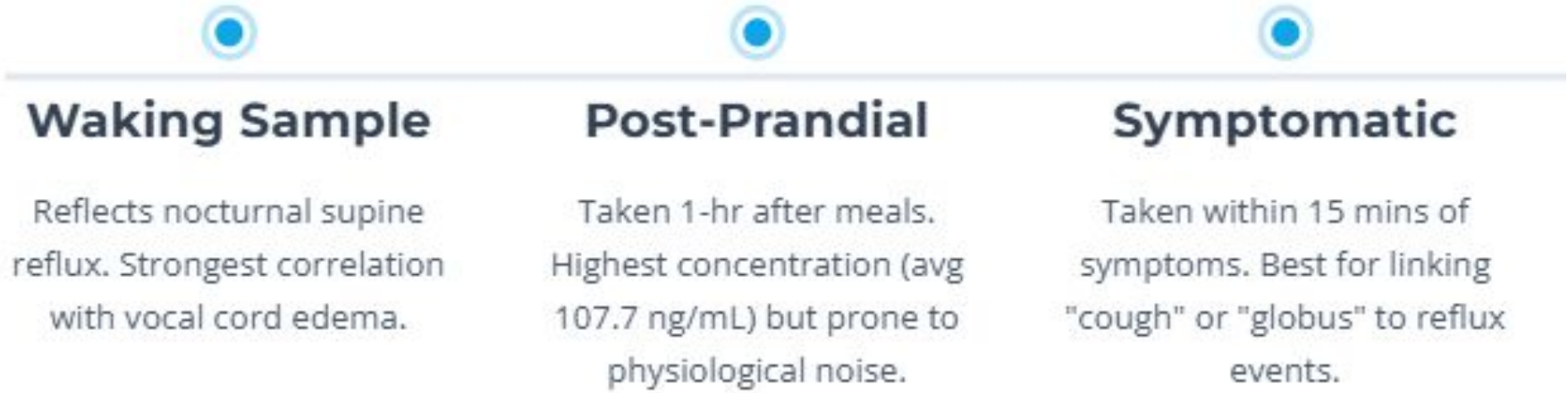
Pepsin

- Pepsin is exclusively produced in the **stomach**.
- Its presence in the **upper airway** is definitive evidence of **reflux.**



Ref:*https://www.mdpi.com/2672020*

Sampling Timing



- General Positivity: > 16 ng/mL
- Definitive pathological: > 100 ng/mL

Pepsin vs. MII-pH Monitoring

Metrics	Salivary Pepsin (Peptest)	24h MII-pH Monitoring
Invasiveness	Non-invasive (Saliva sample)	High
Detection Target	Biological enzyme (Pepsin)	Physical changes (pH/Resistance)
Non-acidic Reflux	Excellent sensitivity	Via impedance
Cost/Availability	Low cost/Office-based	High cost/Tertiary center only
Patient Burden	Low	Significant (24-hour discomfort)

PPI Response

- Patients with **Salivary Pepsin (+)** show a significantly **higher PPI response rate**
  - **Pepsin (+) : 61.1%** symptom improvement.
  - Pepsin (-) : Only 14.3% symptom improvement.

Ref: *Yun JM, Kim KW, Kim S, So YK. Salivary pepsin as an independent predictor of treatment response for laryngopharyngeal reflux: prospective cohort study with multivariate analysis. Sci Rep. 2023;13(1):22893. Published 2023 Dec 21. doi:10.1038/s41598-023-50014-6*

Future Directions

- Need for standardized diagnostic protocols.
- Integration of Artificial Intelligence in laryngoscopic image analysis.
- Long-term outcomes of different treatments.

Conclusions

- **Precision diagnosis** is replacing empiric treatment.
- Multidisciplinary management is essential for refractory cases.

Thanks for listening